AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A miniature confocal optical head (4) for a confocal imaging system, or for an endoscopic confocal imaging system, said head comprising:

- a point source (2b) producing an excitation beam;

- optical ~~means~~ devices (12, 13) capable of causing said ~~optical~~ excitation beam to converge into an excitation point (S) situated in a subsurface plane (P) relative to [[the]] a surface of a specimen, said plane being perpendicular to [[the]] an optical axis (A) of the optical head; and

- ~~means of~~ a device for scanning said excitation point so as to describe a field of view in said subsurface plane in two perpendicular scanning directions, rapid line scanning and slow column scanning,

wherein mechanical micro-system ~~means~~ MEMs (14a-b) capable of moving in translation along a chosen displacement (Dc) of at least one of the optical ~~means~~ devices (12, 13) which is mobile in a direction perpendicular to said optical axis (A) so as to obtain at least one of said scanning directions.

2. (currently amended) The optical head according to claim 1, wherein the slow column scanning corresponds to a frequency of approximately 10 to 15 Hz and the rapid line scanning to a frequency of approximately 4 kHz, so as to produce an image in real time.

3. (currently amended) The optical head according to claim 1, wherein the MEMs ~~means~~ (14a-b) are capable of cooperating with the mobile optical ~~means~~ devices (12, 13) in a diametrically opposite manner and alternately.

4. (currently amended) The optical head according to claim 1, wherein the excitation optical beam produced by the source (2b) is divergent, the optical ~~means~~ devices (12, 13) ~~comprising successively~~ being a first ~~means~~ optical device (12) capable of transforming said divergent beam to a parallel or slightly divergent beam and a second optical ~~means~~ device (13) capable of forming the subsurface focusing point (S).

5. (currently amended) The optical head according to claim 4, wherein the first optical ~~means~~ device (12) is mobile, capable of carrying out optical beam slow column scanning.

6. (currently amended) The optical head according to claim 1, wherein ~~two of~~ the optical ~~means~~ devices (12, 13) are

mobile, each capable of being moved in [[a]] the direction perpendicular to the optical axis so that each defines a scanning direction.

7. (currently amended) The optical head according to claim 1, wherein the source (2b) is mobile, fixed to a ~~piezoelectric-type means~~ piezoelectric device (11) capable of moving the excitation beam emitted by said source with a displacement (D_L) chosen so as to define [[the]] a second scanning direction.

8. (currently amended) The optical head according to claim 7, wherein the second scanning direction and [[the]] characteristics of the piezoelectric ~~means~~ device (11) correspond to rapid line scanning.

9. (currently amended) The optical head according to claim 8, wherein the piezoelectric ~~means comprise~~ device comprises a bimorphic piezoelectric positioner (11) extending along according to the optical axis (A) of the head, said source (2b) being fixed on one ~~of the faces~~ face of said positioner at [[the]] a front end of the positioner facing the optical ~~means~~ devices (12, 13).

10. (currently amended) The optical head according to claim 1, wherein the optical head comprises ~~means~~ a device for modifying [[the]] a depth of the subsurface ~~observation~~ plane (P) in the specimen.

11. (currently amended) The optical head according to claim 10, wherein the ~~means~~ device for modifying the depth of the subsurface observation plane (P) in the specimen comprise micro-mechanical ~~means~~ MEMs (16a-b) capable of moving the ~~certain~~ optical ~~means~~ device (13) along the optical axis (A) of the optical head.

12. (currently amended) The optical head according to claim 11, wherein the ~~MEM means~~ MEMs (16a-b) are capable of moving the ~~second~~ optical ~~focusing means~~ device (13) in order to carry out [[the]] a movement (Z) along [[the]] an optical axis of the ~~optical~~ excitation beam.

13. (currently amended) The optical head according to claim 10, wherein the ~~means~~ device for modifying the depth of the subsurface observation plane (P) ~~comprise means~~ comprise a device adapted for modifying [[the]] a radius of curvature of one of the optical ~~means~~ devices (12, 13).

14. (currently amended) The optical head according to claim 1, wherein the optical head comprises [[the]] a terminal part of ~~an optical fibre~~ the point source (2b) capable of guiding [[the]] an excitation signal from an external source, [[the]] an emergent beam from [[the]] an optical fibre constituting the point source.

15. (currently amended) The optical head according to claim 14, wherein the optical fibre is single-mode with a core diameter ~~allowing~~ adapted to allow spatial filtering of [[the]] a return signal and therefore ensuring the confocality of the head, ~~the optical fibre having as large a~~ with maximized numerical aperture ~~as possible~~.

16. (currently amended) The optical head according to claim 1, wherein the source is of VCSEL type, having a numerical aperture and a cavity outlet diameter compatible with a confocal system, and associated with a detector placed behind [[the]] a cavity of the VCSEL.

17. (currently amended) The optical head according to claim 1, wherein the optical head comprises a ~~tight~~ light window (17) at [[the]] an outlet of the optical head intended to come into contact with the specimen and in order to carry out an index matching.

18. (currently amended) The optical head according to claim 17, wherein the window has a refractive power function on [[the]] a focused optical beam.

19. (currently amended) The optical head according to claim 1, wherein the optical ~~means~~ devices (12, 13) have a numerical aperture at least equal to [[the]] a numerical aperture of the source.

20. (currently amended) A confocal imaging system comprising:

- [[a]] the focusing confocal optical head (4) of claim 1 with integrated beam scanning;

- the source being ~~a source (1, 2a, 2b)~~ capable of emitting [[an]] the excitation beam;

- ~~means (5) of detecting~~ a device (5) configured to detect an emitted signal; and

- an electronic and data processing ~~means~~ apparatus configured for controlling and processing [[the]] an emitted signal (6-9) capable of reconstructing a confocal image of an imaged field~~,~~

~~wherein the optical head (4) is according to claim 1~~.

21. (currently amended) The system according to claim 20, wherein the source comprises an optical fibre (2a) linked to a laser source (1) and coupling ~~means~~ device (3) for coupling said fibre (2a) to [[the]] an optical fibre (2b) for conveying to and from the optical head (4) and a fibre (2c) for conveying the emitted signal to the detection ~~means~~ device (5).

22. (currently amended) The system according to claim 20, wherein the optical head ~~comprising~~ comprises a VCSEL source and an integral detector, the system comprises a flexible linking ~~means~~ device between the optical head and the signal processing ~~means~~ apparatus.